BLM LIBRARY
88068045

OR-911

JOSEPHINE SUSTAINED YIELD UNIT

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

# RECOMMENDED ALLOWABLE HARVEST PLAN

JULY '77

HD
243
.07
J674
1977b

OF LAND MANAGEMENT
ATES DEPARTMENT OF INTERIOR
MEDFORD DISTRICT

# 902645866

1088068045

HD
243
.07
J674
1977b

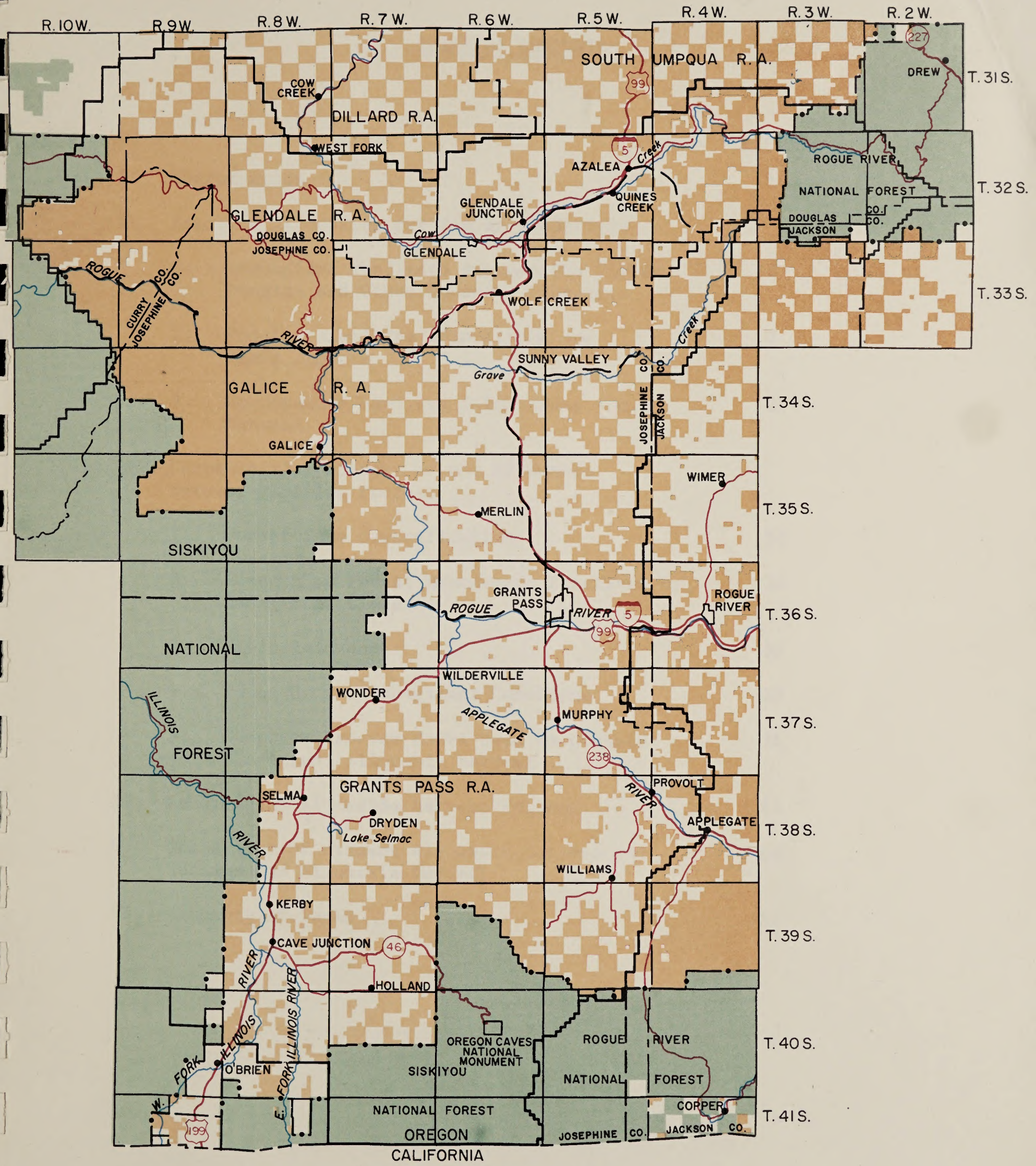
UNITED STATES DEPARTMENT OF INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT

# RECOMMENDED ALLOWABLE HARVEST PLAN

FOR THE

JOSEPHINE SUSTAINED YIELD UNIT

JULY, 1977




## JOSEPHINE MASTER UNIT

1976

- County Boundary
- National Forest Boundary
- Master Unit Boundary
- Resource Area Boundary

- National Forest, Forest Service
- National Resource Lands, BLM

SCALE

MILES 10 5 0 10 20

TABLE OF CONTENTS


| | | Page No. |
|---|---|---|
| I. | Introduction | 1 |
| II. | Land Use Allocation for Timber Production | |
| | 1. Identified Conflicts Between the Timber Program and Other Resource Programs | 2 |
| | 2. Possible Land Use Allocations and Their Impacts | 3 |
| | 3. Recommended Land Use Allocations and Reasons | 21 |
| III. | Chronological History of the Allowable Harvest Planning Process | |
| | 1. Forest Land Classification | 30 |
| | 2. Prescribed Forest Management Practices by Management Class | 31 |
| | 3. Field Reinventory | 32 |
| | 4. Young Growth Management Committee | 32 |
| | 5. Computer Program Model Used to Compute the Annual Allowable Harvest | 34 |
| IV. | Recommended Allowable Harvest Volumes | 43 |
| V. | Comparison of Present Allowable Harvest and Recommended Allowable Harvest | 46 |
| VI. | Glossary of Terms | 51 |

# LIST OF ILLUSTRATIONS


| Tables | | Page No. |
|---|---|---|
| 1 | Possible Land Use Allocations and Their Impacts | |
| 2 | Josephine Sustained Yield Unit Timber Production Capability Summary | |
| 3 | Past Management of High Intensity Forest Management Lands in the Josephine Sustained Yield Unit | |
| 4 | Prescribed Management Treatments for High Intensity Management Lands for the Next Ten Years, Josephine Sustained Yield Unit | |
| 5 | Cost Estimates for Intensive Timber Management Practices, Medford District, 1976 | |
| 6 | Ranking of Intensive Practices by Benefit - Cost Ratio | |
| 7 | Yield Functions Generated by the Young Growth Management Committee for Use in Making Economic Analysis of Timber Investments | |
| 8 | Adjustments to Annual Harvest Volumes | |
| 9 | Comparison of Intensive Forest Management Practices Used in Computing the Current Harvest Plan and Recommended Harvest Plan | |

Figures

| | | |
|---|---|---|
| 1 | Relationship of Allowable Harvest Planning to Land Use Planning | |
| 2 | Distribution of Acres by Age Class, 1977 Inventory | |
| 3 | Acreage Distribution Used in 1970 Allowable Harvest Computation | |
| 4 | Acreage Distribution Used in 1977 Proposed Allowable Harvest Computation | |

# I

# INTRODUCTION

# INTRODUCTION

This plan describes the recommended future management of the timber resources in the Josephine Sustained Yield Unit. It represents the forestry portion of a draft multiple use plan called a Management Framework Plan (MFP).

The MFP and harvest plan are both in draft form, awaiting public comment. Copies of the MFP are available for inspection at the following locations until August 31:

Josephine County Library, Illinois Valley Branch,
Cave Junction, Oregon

Curry Public Library, Colvin Street,
Gold Beach, Oregon

City of Glendale Library, Glendale, Oregon

Josephine County Library, 506 N.W. 5th,
Grants Pass, Oregon

BLM Office, Post Office Building
Grants Pass, Oregon - Monday, Wednesday, Friday 1-5 P.M.

BLM District Office, 310 W. Sixth Street,
Medford, Oregon

Written comments on these plans should be mailed by August 31st to our Medford Office, 310 West Sixth Street, Medford, Oregon 97501.

An Environmental Statement (ES) addressing the recommended allowable harvest plan for the Josephine Sustained Yield Unit was initiated in January of 1977. There will be opportunity for further public comment when the ES is released later this year. The team preparing the ES is located at the BLM State Office in Portland. Their mailing address is P. O. Box 2965, Portland, Oregon 97208; their phone number is 234-3361, Ext. 4125.

# PART II

## Land Use Allocation For Timber Production

1. Identified Conflicts Between the Timber Program and Other Resource Programs

In the Josephine Management Framework Plan (MFP), the timber program recommended managing all commercial forest lands as intensively as the sites permit. The other resource programs, however, recommended several management practices which would either limit or preclude forest management on certain areas. Conflicts with high intensity forest management lands and the acres involved, are as follows:

a. No timber harvesting was recommended within 200 feet (average distance) of Class I streams, within 50 feet (average distance) of important Class II streams, and within 20 feet (average distance) of other perennial and intermittent streams. This involves 3,200 acres along Class I streams, 800 acres along important Class II streams, and 9,440 acres along other perennial and intermittent streams.

b. No spraying of herbicides or application of fertilizer was recommended within 200 feet of any perennial stream. This involves 3,200 acres along Class I streams, 3,200 acres along important Class II streams, and about 20,000 acres along other perennial Class II streams.

c. 428 acres were recommended for disposal.

d. Maintenance of 25-40% of crucial elk winter range was recommended to be kept in a closed canopy condition with cover at least 50 feet high. This involves 5,000 acres.

e. No timber harvesting was recommended in potential campgrounds and picnic area. This involves 1,300 acres.

f. No timber harvesting was recommended in potential botanical sightseeing areas. This involves 244 acres.

g. No timber harvesting was recommended within a 10-chain radius of endangered species nests. This involves 449 acres.

h. No timber harvesting was recommended within currently unroaded areas. This involves 3,590 acres.

i. Recreation recommended that timber harvesting and other vegetative manipulations, as well as roads and structures, should not be obvious to the casual observer in VRM Class II lands. This involves 3,100 acres.

j. Recreation recommended that timber harvested areas, other vegetative manipulations, roads, and structures should not be dominant landscape features within VRM Class III lands. This involves 29,500 acres.

k. Retention of two snags and two green cull trees was recommended on each acre of commercial forest land. This involves all high intensity management lands.

l. Wildlife recommended allowing 25% of each final harvested area to regenerate naturally. This involves 25% of the high intensity management lands or 57,150 acres.

m. Wildlife recommended increasing the number of clear-cut units within crucial deer winter range. No acreage was computed for this conflict.

n. Recreation recommended that timber harvesting not visually or audibly intrude on the Rogue "Wild" River environment during the summer season. This involves 1,300 acres from a visual standpoint, and several thousand additional acres from an audible standpoint.

2. Possible Land Use Allocations and Their Impacts

Table 1 shows possible land use allocations and their impacts for areas where there are conflicts between intensive timber management and other resource programs. Two extremes are shown (i.e., maximum timber production and maximum protection of the other resources) to establish "sideboards". Although there are numerous alternatives representing varying degrees of compromise between the two extremes, only the recommended allocation is presented.

TABLE 1

Possible Land Use Allocations And Their Impacts

| Conflict | MANAGEMENT ALTERNATIVES CONSIDERED | | |
|---|---|---|---|
| | Maximum Timber Production | Recommended Management | Maximum Protection of Other Resources |
| A. Class I Stream Buffers | | | |
| 1. Description | No buffer - unrestricted harvesting up to streamsides. | 100 feet on each side of streams - salvage of dead timber. | 200 feet on each side of streams - no harvesting activity. |
| 2. Impacts | | | |
| Timber | Base Acreage - no reduction<br>Annual Harvest - 1,392 MBF ( 272 MCu.Ft.)<br>Annual Local Income - $146,160 | Base Acreage - 1,600 acres removed<br>Annual Harvest - 696 MBF ( 136 MCu.Ft.)<br>Annual Local Income - $73,080 | Base Acreage - 3,200 acres removed<br>Annual Harvest - none<br>Annual Local Income - none |
| Fisheries | Anadromous fisheries lost | Anadromous fisheries maintained | Anadromous fisheries maintained |
| Wildlife Habitat | Critical riparian habitat lost | Critical riparian habitat reasonably maintained | Critical riparian habitat preserved |
| Recreation (other than hunting & fishing) | Visually disrupted | Visual landscape reasonably maintained | Visually landscape preserved |
| Water Quality | Considerable Degradation | Maintained | Improved |

| Conflict | MANAGEMENT ALTERNATIVES CONSIDERED | | |
|---|---|---|---|
| | Maximum Timber Production | Recommended Management | Maximum Protection of Other Resources |
| B. Identified Class II Stream Buffers | | | |
| 1. Description | No buffer - unrestricted harvesting up to streamsides. | Harvest with protective shelterwood system, with objective of a 150-year age class. | 50 feet on each side of streams - no harvesting or other activity. |
| 2. Impacts | | | |
| Timber | Base Acreage - no reduction<br>Annual Harvest - 347MBF (68 MCu.Ft.)<br>Annual Local Income - $36,435 | Base Acreage - no reduction<br>Annual Harvest - 295MBF (58 MCu. Ft.)<br>Annual Local Income - $30,975 | Base Acreage - 800 acres removed.<br>Annual Harvest - none<br>Annual Local Income - none |
| Fisheries | Trout fisheries lost. | Trout fisheries maintained. | Trout fisheries maintained or expanded. |
| Wildlife Habitat | Critical riparian habitat lost. | Critical riparian habitat reasonably maintained. | Critical riparian habitat preserved. |
| Recreation (other than hunting and fishing) | Visually disturbed landscape. | Visual landscape reasonably undisturbed. | Visual landscape preserved. |
| Water Quality | Considerable Degradation | Maintained | Improved |

| Conflict | MANAGEMENT ALTERNATIVES CONSIDERED | | |
|---|---|---|---|
| | Maximum Timber Production | Recommended Management | Maximum Protection of Other Resources |
| C. Unidentified Class II Stream Buffers | | | |
| 1. Description | No buffer - unrestricted harvesting up to streamside. | Harvest timber, provided shade is maintained adjacent to stream from hardwoods, non-commercial conifers and/or brush. Timber will not be felled into or yarded through the stream. | 20 feet on each side of streams - no harvesting or other activity. |
| 2. Impacts | | | |
| Timber | Base Acreage - no reduction<br>Annual Harvest - 3,983 MBF (781 MCu.Ft.)<br>Annual Local Income - $418,215 | Base Acreage - no reduction<br>Annual Harvest - 3,983 MBF (781 MCu.Ft.)<br>Annual Local Income - $418,215 | Base Acreage - 9,440 acres removed.<br>Annual Harvest - none<br>Annual Local Income - none |
| Fisheries | Adverse impact on downstream fisheries. | Minimal impact on downstream fisheries | Downstream fisheries preserved. |
| Wildlife Habitat | Riparian habitat lost. | Riparian habitat reasonable maintained. | Riparian habitat preserved. |
| Recreation (other than hunting & fishing) | Visual landscape disturbed | Visual landscape reasonable undisturbed. | Visual landscape preserved. |
| Water Quality | Considerable Degradation | Maintained | Improved |

| Conflict | MANAGEMENT ALTERNATIVES CONSIDERED | | |
|---|---|---|---|
| | Maximum Timber Production | Recommended Management | Maximum Protection of Other Resources |
| D. No Spray - No Fertilize Buffers | | | |
| 1. Description | No buffer - unrestricted use of herbicides for site preparation and release and unrestricted application of fertilizer | No herbicide spraying or fertilizer application within 100 feet of any perennial stream. | No herbicide spraying or fertilizer application within 200 feet of all streams |
| 2. Impacts | | | |
| Timber | Base Acreage - no reduction<br>Annual Harvest - no reduction | Base Acreage - no reduction<br>Annual Harvest - slight reduction because of no fertilization; other means are available for site preparation & release | Base Acreage - no reduction<br>Annual Harvest - moderate reduction (double that for recommended management). |
| Fisheries | Considerable losses could occur. | Minimal impact. | No adverse impacts. |
| Water Quality | Considerable degradation | Maintained | Improved |

| Conflict | MANAGEMENT ALTERNATIVES CONSIDERED | | |
|---|---|---|---|
| | Maximum Timber Production | Recommended Management | Maximum Protection of Cavity Nesting Habitat |
| E. Snags and Cull Trees | | | |
| 1. Description | Harvest all base acreage via clearcutting or 2-stage partial cutting (even-age management). | Harvest base acreage via clearcut or 2-stage partial cutting. Retain snags and culls on the boundaries or corners of all clearcut/2-stage partial cut units. Acres removed from base for other consideration plus limited management lands would ultimately provide the cavity nesting habitat once the timber base is under second growth management. | Harvest all base acreage via multiple entry shelterwood system (all-age management). |
| 2. Impacts | | | |
| Timber | Annual Harvest - no reduction | Annual Harvest - no additional reductions above those made for streamside buffers, spotted owls, botanical acres and VRM Class II lands which were reclassified to VRM Class I. | Annual Harvest - reduced by 14,242 MBF (2,763 MCu.Ft.) |
| | Annual Local Income - no reduction | Annual Local Income - no reduction. | Annual Local Income - reduced $1,495,410. |
| Wildlife (cavity nesters) | All old growth timber habitat would eventually be converted to second growth. | Old growth timber habitat would be maintained in streamside buffers, spotted owl nest buffers, botanical areas, VRM Class I lands, & limited management lands. | Mature timber habitat would be maintained in all forested lands. |

| Conflict | MANAGEMENT ALTERNATIVES CONSIDERED | | |
|---|---|---|---|
| | Maximum Timber Production | Recommended Management | Maximum Protection of Elk Winter Range |
| F. Elk Cover | | | |
| 1. Description | Harvest without regard to impact on elk winter range. | Harvest within the elk winter ranges, but stagger cutting units to provide 25-40% in a closed canopy condition as recommended. | Do not harvest within the elk winter ranges. |
| 2. Impacts | | | |
| Timber | Base Acreage - no reduction<br>Annual Harvest - 2,177 MBF ( 427 MCu.Ft.)<br>Annual Local Income - $228,585 | Base Acreage - no reduction<br>Annual Harvest - 2,177 MBF (427 MCu.Ft.)<br>Annual Local Income -$228,585 | Base Acreage - 5,000 acres removed.<br>Annual Harvest - none<br>Annual Local Income - none |
| Elk Population | May decrease, as acres of old growth timber habitat could be harvested in a short period of time. | Should be maintained, as recommended amount of habitat (2,000 acres) would remain in a closed canopy at any one time. | Would probably increase, as all remaining old growth habitat would be preserved. |

| Conflict | MANAGEMENT ALTERNATIVES CONSIDERED | | |
|---|---|---|---|
| | Maximum Timber Production | Recommended Management | Maximum Protection of Spotted Owl Nest Sites |
| G. Spotted Owl Nest Sites | | | |
| 1. Description | Harvest the spotted owl nest site buffers. | Leave a 40-acres no-harvest buffer around each of the 11 spotted owl nest sites. | Same as Recommended Management. |
| 2. Impacts | | | |
| Timber | Base Acreage - no reduction<br><br>Annual Harvest - 192 MBF (38 MCu.Ft.)<br>Annual Local Income - $20,160 | Base Acreage - 440 acres removed.<br>Annual Harvest - none<br><br>Annual Local Income - none | |
| Wildlife (spotted owls) | Destruction of nesting habitat for the 11 pairs with probable loss of the birds and offspring. | Preservation of the nesting habitat, probable survival of the 11 pairs and offspring. | |

| Conflict | MANAGEMENT ALTERNATIVES CONSIDERED | | |
|---|---|---|---|
| | Maximum Timber Production | Recommended Management | Maximum Protection of Other Resources |
| H. Unroaded Areas | | | |
| 1. Description | Harvest the 3,590 acres within the proposed primitive study area. | Redefine the proposed primitive study area boundaries to eliminate all existing roads and previously harvested areas. Delay harvesting on the remaining 1,590 acres until a study is completed regarding possible primitive or backcountry area designation. | Do not harvest any of the 3,590 acres within the proposed primitive study area. |
| 2. Impacts | | | |
| Timber | Base Acreage - no reduction<br>Annual Harvest - 1,563 MBF (306 MCu.Ft.)<br>Annual Local Income - $164,115 | Base Acreage - no reduction<br>Annual Harvest - 1,563 MBF (306 MCu. Ft.)<br>Annual Local Income - $164,115 | Base Acreage - 3,590 acres<br>Annual Harvest - none<br>Annual Local Income - none |
| Undisturbed Environment | Significantly diminished. | Maintained until study is completed regarding possible primitive or backcountry area designation.. | Maintained permanently. |
| Wildlife | No old growth timber habitat preserved; road encroachment on bear and cougar habitat adjacent to Rogue Wild River. | 1,590 acres of old growth timber habitat preserved; some road encroachment on bear and cougar habitat adjacent to Rogue Wild River. | 3,590 acres of old growth timber habitat preserved indefinitely; no road encroachment on bear and cougar habitat adjacent to the Rogue Wild River. |

| Conflict | MANAGEMENT ALTERNATIVES CONSIDERED | | |
|---|---|---|---|
| | Maximum Timber Production | Recommended Management | Maximum Protection of Other Resources |
| I. Potential Recreation Sites | | | |
| 1. Description | Harvest the 1,300 acres of potential recreation areas. | Delay harvesting until the potential of each site is re-evaluated in detail. | Do not harvest the 1,300 acres of potential recreation areas. |
| 2. Impacts | | | |
| Timber | Base Acreage - no reduction<br>Annual Harvest - 566 MBF (111 MCu.Ft.)<br>Annual Local Income - $59,430 | Base Acreage - no reduction<br>Annual Harvest - 566 MBF (111 MCu.Ft.)<br>Annual Local Income - $59,430 | Base Acreage - 1,300 acres removed.<br>Annual Harvest - none<br>Annual Local Income - none |
| Recreation Site Quality | Severely diminished | Maintained until the re-evaluations are complete. | Maintained. |
| Wildlife | No old growth timber habitat preserved. | 1,300 acres of old growth timber preserved pending re-evaluation studies. | 1,300 acres of old growth timber preserved indefinitely. |

| Conflict | MANAGEMENT ALTERNATIVES CONSIDERED | | |
|---|---|---|---|
| | Maximum Timber Production | Recommended Management | Maximum Protection of Other Resources |
| J. Botanical Sightseeing Areas | | | |
| 1. Description | Harvest with no restrictions. | Do no harvesting within the area. | Same as Recommended Management. |
| 2. Impacts | | | |
| Timber | Base Acreage - no reduction<br><br>Annual Harvest - 108 MBF (21 MCu. Ft.)<br>Annual Local Income - $11,340 | Base Acreage - 250 acres removed.<br>Annual Harvest - none<br><br>Annual Local Income - none | |
| Recreation | Unusual plant communities would be damaged or destroyed. | Unusual plant communities which include rare/ threatened species would be preserved. | |
| Wildlife | No old growth timber habitat left on these sites. | 250 acres of old growth timber habitat preserved. | |

| Conflict | MANAGEMENT ALTERNATIVES CONSIDERED | | |
|---|---|---|---|
| | Maximum Timber Production | Recommended Management | Maximum Protection of Other Resources |
| K. VRM Class II lands | | | |
| 1. Description | Harvest all VRM Class II lands via clear-cutting or 2-stage partial cutting | No harvesting on VRM Class II lands adjacent to the Rogue Wild and Scenic Corridor (1,300 acres). Manage the remaining 1,700 acres with a protective shelterwood system | No harvesting on VRM Class II lands. |
| 2. Impacts | | | |
| Timber | Base Acreage - no reduction<br>Annual Harvest - 1,306 MBF (256 MCu.Ft.)<br>Annual Local Income - $137,130 | Base Acreage - 1,300 acres removed<br>Annual Harvest - 677 MBF (133 MCu.Ft.)<br>Annual Local Income - $71,085 | Base Acreage - 3,000 acres removed<br>Annual Harvest - none<br>Annual Local Income - none |
| Landscape | Harvested areas would dominate the landscape (would not meet VRM management objectives). | Harvested areas not obvious to casual observer (would meet or exceed VRM management objectives). | Entire 3,000 acres would be preserved in natural setting (would exceed VRM management objective). |
| Wildlife | No old growth timber habitat would be preserved; roads would encroach on bear and cougar habitat adjacent to Rogue Wild River. | 1,300 acres of old growth timber habitat would be preserved; would preserve most of the existing bear and cougar habitat adjacent to the Rogue Wild River. | 3,000 acres of old growth timber habitat would be preserved, along with most of the and cougar habitat adjacent to the Rogue Wild River |

| Conflict | MANAGEMENT ALTERNATIVES CONSIDERED | | |
|---|---|---|---|
| | Maximum Timber Production | Recommended Management | Maximum Protection of Other Resources |
| L. VRM Class III Lands | | | |
| 1. Description | Harvest all VRM Class III lands via clearcutting or 2-stage partial cutting. | Permit 40 acre units to be harvested, provided they are compatible with the topography, have irregular boundaries and do not become a dominant feature on the landscape. | No harvesting on VRM Class III lands. |
| 2. Impacts | Base Acreage - no reduction | Base Acreage - no reduction | Base Acreage - 30,000 acres removed. |
| Timber | Annual Harvest - 13,060 MBF (2,561 MCu.Ft.)<br>Annual Local Income -$1,371,300 | Annual Harvest - 13,060 MBF (2,561 MCu.Ft.)<br>Annual Local Income-$1,371,300 | Annual Harvest - none<br>Annual Local Income - none |
| Landscape | Harvested areas would dominate the landscape (would not meet VRM management objectives). | Harvested areas would not dominate the landscape (would meet VRM management objective.). | Entire 30,000 acres would be preserved in natural setting (would exceed VRM management objective). |
| Wildlife | No old growth timber habitat would be preserved on these sites. | No old growth timber habitat would be preserved on these sites. | 30,000 acres of old growth timber habitat would be preserved. |

| Conflict | MANAGEMENT ALTERNATIVES CONSIDERED | | |
|---|---|---|---|
| | Maximum Timber Production | Recommended Management | Maximum Recommended Land Tenure Adjustments |
| M. Proposed Land Disposals | | | |
| 1. Description | Retain all Public Land which is commercial forest land in Federal ownership. | Dispose of parcels, by exchange only, which are not suitable for timber management, crucial deer or elk winter range, or recreation. | Dispose of all recommended parcels into private ownership by sale or exchange. |
| 2. Impacts | | | |
| Timber | Base acreage - no reduction<br><br>Annual Harvest - 186 MBF (36 MCu.Ft.)<br>Annual Local Income - $19,530 | Base Acreage - no reduction<br><br>Annual Harvest - 186 MBF (36 MCu.Ft.)<br>Annual Local Income - $19,530 | Base Acreage - 428 acres removed.<br>Annual Harvest - none<br><br>Annual Local Income - none |
| Crucial Deer/ Elk Winter Range | No acreage lost | No acreage lost | Loss of 170 acres |
| Recreation | No acreage lost | No acreage lost | Loss of 80 acres in Rogue Recreation River Corridor |
| Lands | May hinder future residential/ suburban developements slightly. | May hinder future residential suburban developments slightly. | Would facilitate development of future residential/suburban developments. |

| Conflict | MANAGEMENT ALTERNATIVES CONSIDERED | | |
|---|---|---|---|
| | Maximum Timber Production | Recommended Management | Maximum Protection of Other Resources |
| N. NRL Adjacent to Rogue Wild River Corridor | | | |
| 1. Description | Harvest whenever possible throughout the year and disregard visual or audible intrusions. | Allow harvesting between June 12 and September 12; Reclassify 1,300 acres along the Rogue River from VRM Class II to VRM Class I, which precludes harvesting; use careful sale layout in the visual background to avoid creating visual intrusions; audible intrusions may be made. | No harvesting between June 12 and September 12. |
| 2. Impacts | Same as under VRM Class II lands alternative for the 1,300 acres along the Rogue River. | Sames as under VRM Class II lands alternative for the 1,300 acres along the Rogue River ( no additional reduction in the timber base). | Same as under VRM Class II lands alternative for the 1,300 acres along the Rogue River ( no additional reduction in the timber base). |
| Timber | | | |
| Rogue Wild River Environment | Harvested areas would dominate the visual landscape and there would be constant audible intrusions associated with timber harvesting. | Harvested areas would not be obvious to the casual observer, but there would be some audible intrusions. | Harvested areas would not be obvious to the casual observer, and there would be no audible intrusions during the heaviest use period of June 12 - September 12. |

| Conflict | MANAGEMENT ALTERNATIVES CONSIDERED | | |
|---|---|---|---|
| | Maximum Timber Production | Recommended Management | Maximum Production of Deer Forage |
| O. Deer Winter Range | | | |
| 1. Description | Harvest by prescribed silvicultural method. | Harvest by prescribed silvicultural method. | Harvest by clear-cut only. |
| 2. Impacts | | | |
| Timber | Maintenance of lands in timber base. | Maintenance of lands in base. | Probably regeneration lag in excess of 5 years which would drop the lands from the timber base. |
| Forage for deer | Not as much on 2-stage partial cut areas. | Not as much on 2-stage partial cut areas. | More than would be produced on 2-stage partial cut areas. |

| Conflict | MANAGEMENT ALTERNATIVES CONSIDERED | | |
|---|---|---|---|
| | Maximum Timber Production | Recommended Management | Maximum Wildlife Forage Production |
| P. Allow 25% of Harvested Areas to Regenerate Naturally | | | |
| 1. Description | Artificially reforest (plant) all harvested areas within one year after harvest | Artificially reforest (plant) all harvested areas within one year after harvest. | Allow 25% of harvested areas to regenerate naturally. |
| 2. Impacts | | | |
| Timber | Base Acreage - no reduction<br>Annual Harvest - no reduction<br>Annual Local Income- $2,467,500 | Base Acreage - no reduction<br>Annual Harvest -no reduction<br>Annual Local Income - $2,467,500 | Base Acreage - reduced 57,150 acres.<br>Annual Harvest - reduced 23.5 MMBF (4.55 MMCu.Ft.).<br>Annual Local Income-none |
| Wildlife | Habitat change and increased forage production only for a few years. | Habitat change and increased forage production only for a few years. | Habitat change and increased forage production will last for several years. |

| Conflict | MANAGEMENT ALTERNATIVES CONSIDERED | | |
|---|---|---|---|
| | Maximum Timber Production | Recommended Management | Maximum Protection of Other Resources |
| Summary<br><br>Total Acreage of conflict involved is 47,640 acres. | | | |
| Total Impacts | 20,739 MBF (4,066 MMCu.Ft.) harvested annually from 47,640 acres; $2,177,595 annual local income generated from timber harvested. | 19,015 MBF (3,728 MMCu.Ft.) harvested annually from 44,050 acres; $1,996,575 annual local income generated from timber harvested. | 47,460 acres removed from base No MBF harvested annually from these lands. |
| | Water quality reduced below reasonable standards. | Water quality maintained at reasonable standards. | Water quality maintained or exceeding reasonable standards. |
| | Visual landscape degraded. | Visual landscape meets recommended standards. | Visual landscape exceeds recommended standards. |
| | Wildlife population depleted and coldwater fisheries lost. | Wildlife population maintained and coldwater fisheries maintained. | Wildlife population maintained or expanded and coldwater fisheries maintained or improved. |

3. Recommended Land Use Allocation and Reasons

a. For high intensity forest management lands:

(1) Harvest the high intensity forest management lands on a sustained yield basis to realize the highest level of productivity within the following guidelines:

a. Provide a 100 foot average width buffer on each side of Class I streams; management of the 100 foot buffer would be limited to salvaging dead timber and providing continuous protection to the stream through succeeding forests. Note: This would reduce the potential high intensity management acreage by 1600 acres and the potential annual allowable harvest by 696 MBF (136 M.Cu.Ft.).

Use a protective shelterwood system, with an objective of a 150 year age class within 50 feet of identified Class II streams (800 acres total). Note: This reduces the potential annual allowable harvest by 52 MBF (10 M.Cu. Ft.).

Use no restrictions on harvesting systems within 20 feet of unidentified Class II streams, but maintain shade from hardwoods, noncommerical conifers, and/or brush species, do not fell trees into or yard through the creeks, and do not harvest entire drainages at one time.

Reason

This substantially protects the other resources while recognizing the importance of the timber program.

b. Retain snags and cull trees for wildlife on the boundaries and/or corners of all units.

Reason

Retaining snags and cull trees on the boundaries or corners of units will provide habitat for cavity nestors. State safety codes prohibit retaining tall snags within the harvesting area.

c. Schedule harvesting operations within the elk winter ranges in such a manner that thermal cover will be maintained when considering buffer strips, private lands and/or limited management lands.

Reason

Thermal cover is a critical element for winter survival of elk. This cover can be maintained on areas adjacent to the harvested units.

d. Withdraw 440 acres (in total) around the 11 known spotted owl nest sites from the high intensity management acreage and conduct no harvesting within these areas; should additional spotted owl or other endangered species nest sites be identified, reserve a ten chain radius no-cut buffer around them. Note: This reduces the potential annual allowable harvest by 192 MBF (38 M. Cu. Ft.).

Reason

BLM policy requires preservation of habitats of rare or endangered species; spotted owls are on the state's rare/threatened animal list.

e. Redefine the boundaries of the potential primitive or backcountry areas to eliminate existing roads and previously harvested areas; delay harvesting on the 1,590 acres suitable for cutting and complete a study for inclusion into the backcountry or primitive system. Note: The high intensity management acreage is not affected.

Reason

The original recommendation included roads and cutover areas.

f. Delay harvesting on potential recreation sites (involves 1,300 acres) until a determination is made as to their suitability for recreation site development. Note: The high intensity management acreage is not affected.

Reason

The high intensity management acreage can be adjusted after the decision is made on the potential recreation sites. Any major cutting in these areas prior to the determination of suitability for a recreation site would detract from future recreation development.

g. Withdraw the 250 acres proposed as botanical sightseeing areas from the high intensity management acreage and conduct no harvesting within these areas. Note: This reduces the potential annual allowable harvest by 108 MBF (21 M. Cu. Ft.).

Reason

BLM policy requires protection of rare and endangered plants.

h. Reclassify 1,300 acres of VRM Class II lands adjacent to the Rogue River to VRM Class I, remove them from the high intensity management acreage, and conduct no harvesting on these lands; manage the remaining Class II lands (1,700 acres) with a protective shelterwood system. Note: This reduces the potential annual allowable harvest by 677 MBF (133 M. Cu. Ft.).

Reason

Some of the lands in VRM Class II adjacent to the Rogue River are in the visible foreground of the river. To help maintain the pristine nature of the river environment, reclassifying 1,300 acres of these lands to VRM Class I will preclude harvesting. The VRM Class II requirements can be met on the remaining 1,700 acres by use of the protective shelterwood management system.

i. Harvest lands classified as VRM Class III by clear-cutting or partial cutting, provided the harvested area does not become a dominant feature on the landscape; limit the size of harvest units to a maximum of 40 acres with irregular boundaries which are compatible with the existing landscape.

Reason

The VRM Class III requirements can be met with this method of harvesting.

j. Retain all NRL classified by the TPCC for high intensity forest management (428 acres), which were recommended for disposal, in federal ownership.

Reason

These lands are more valuable for multiple use management in federal ownership than private.

k. Permit harvesting operations with careful planning and layout to prevent a visual intrusion adjacent to the Rogue Wild and Scenic River Corridor; audible intrusions may be made.

Reasons

Periodic audible intrusions from the sound of logging equipment does not permanently or substantially change the natural sounds or sound level normally expected in a natural area any more than jet aircraft flying overhead. These sounds come from outside the Congressional withdrawal. It was not the intent of Congress to eliminate man made sound from a wild and scenic river, only maintain the river and its immediate surroundings in a wild condition.

1. Within deer winter ranges, harvest by clear-cutting wherever not precluded by other constraints.

Reasons

A shelterwood cutting system does not provide as much desirable wildlife forage as clearcutting.

(2) Treat all areas requiring site preparation prior to reforestation, with the following restrictions:

a. Plant palatable wildlife forage species along road cuts and fill slopes of landings.

Reason

These plants will help stabilize the banks and still provide wildlife feed.

b. Leave several logs per acre when gross yarding. Gross yard only when necessary for silvicultural reasons.

Reason

Leaving a few logs on a cutover area will provide habitat for cavity nesting wildlife and still have very little effect on the reforestation program.

c. Manage areas of pure oak within limited management areas primarily for wildlife use but attempt to convert pure oak stands to commercial conifer species within intensive forest management areas.

Reason

Leaving the oak stands that lie in the limited management areas will benefit wildlife with very little detrimental effect on the timber program.

d. Plan projects to avoid treatment of an entire drainage within a short period of time.

Reason

Projects can be spread out over the sustained yield unit. This will produce the desired effect for timber and still not be detrimental to wildlife.

e. Conduct mechanical site preparation using the guidelines recommended in the Watershed section of the Josephine MFP.

Reason

Steeper slopes are subject to severe erosion which would add to sedimentation of streams.

f. Do not make aerial applications of herbicides within 100 feet of any perennial stream.

Reason

A 100 foot buffer will sufficiently protect the stream, wildlife habitat, and scenic quality.

g. Do not conduct mechanical site preparation or controlled burning within 100 feet of Class I streams, within 50 feet of perennial Class II streams, or within 20 feet of important intermittent streams.

Reason

The recommended buffer will sufficiently protect the streams and riparian habitat.

h. Conduct herbicide projects on VRM Class II lands, provided the project boundaries are irregular in shape and blend in with the natural contour of the landscape; hand spray a 50 foot buffer adjacent to roads that receive high recreational use.

Conduct herbicide projects on VRM Class III lands provided the treated area does not become a dominant landscape feature.

Reason

BLM should plan, design, and implement its resource management activities in a manner which will minimize adverse effects on the visual resource.

(3) Plant all units receiving regeneration cuts within one year of harvest; rip compacted skid trails on tractor logged areas prior to planting; spray competing vegetation as needed, with approved herbicides, for seedling release; seed road cut and fill slopes and landings with grass and desirable wildlife forage species; examine units to determine site index and stocking densities and then replant and interplant nonstocked and understocked units. Note: Herbicide treatments should be consistent with T-1.2; treat no more that 50% of drainages over 1,000 acres in any one year.

Reason

To achieve the policy of sustained yield management, it is essential to reforest harvested lands within the shortest time. This will not have a significant effect on wildlife, as there are many acres of good wildlife habitat not classified as high intensity management lands. The planting density should be consistent with the site's capability to support tree growth. At the public meetings held in April and June, 1976, reforestation was a major concern.

The PAA indicates that a significant income for both O&C counties and the Federal treasury results from timber harvesting. It also indicates local employment in the harvesting and wood processing fields within the area is significant.

Including wildlife forage species with roadside mulch will help satisfy wildlife needs with no conflict with other resources.

(4) Precommercial thin all commercial stands under 15 years in age which contain over 400 stem/acre less than five inches in diameter. Note: Approximately 18,700 acres will be precommerical thinned in the next ten years.

Commercial thin all areas that are precommercially thinned; continue to commercially thin when crown closure and competition results in reduction of growth rates. Note: Approxmiately 3,600 acres will be commercial thinned in the next ten years.

Do not thin an entire drainage (more than 1,000 acres) at one time, and maintain a 100' unthinned buffer on each side of Class I streams.

Reason

A PCT + CT operation will increase productivity, which in turn will assist in meeting the increasing demand for forest products as indicated by the PAA.

Fisheries and wildlife habitat can be reasonably maintained by providing shade adjacent to streams and not treating an entire drainage at any one time.

A major concern expressed at the public meetings in April, 1976, was that BLM should utilize more intensive forest management practices, especially labor oriented operations such as PCT, to contribute to local employment opportunities.

If thinning does not occur as recommended the potential annual allowable harvest would be reduced by 12.79 million board feet (2.51 million cubic feet).

(5) Fertilize 22,300 acres that will be precommercial thinned or commercial thinned within the next ten years.

Do not fertilize within 100' of any perennial stream; make a detailed on-site soils analysis to determine the rate of application, time between applications, and composition of fertilizer needed.

Reasons

Research indicates approximately 22% increase in yields from fertilization can be expected on areas meeting these criteria.

Fertilization will reduce the shock effect occuring from thinning operations.

To receive the full return from fertilization, ten year's growth should take place before harvesting.

If fertilizing does not occur as recommended, the annual allowable harvest would be reduced by 5.93 million board feet (1.17 million cubic feet).

In summary, the cumulative effect of the multiple use considerations is a reduction in the high intensity management acreage from 226,500 acres to 222,900 acres, and a reduction in the potential annual allowable harvest from 94.46 million board feet (18.52 million cubic feet) to 93.07 million board feet (18.25 million cubic feet).

b. For low intensity forest management lands:

1. Initiate a trial management program that will harvest

approximately 600 acres per year for the next 10 years using a 2-stage shelterwood cutting system; no cutting will take place in portions of the 55,700 acres involved in the described multiple use conflict situations.

Reasons

In as much as this is a trial program designed to generate specific information, none of the planned harvesting actions should take place on acres where there are conflict situations with other resources. There are adequate non-conflict areas available to allow this program to proceed as planned during the initial decade.

2. Conduct site preparation by aerial application of herbicides on all harvest units during good seed years to assist in the establishment of reproduction.

Reason

As described in 1. above, harvest activity will take place in non-conflict areas. It follows, therefore, that site preparation activities will also occur only on non-conflict areas.

3. Reforestation of the harvested areas will be by natural seeding; adequately stocked areas should be treated with herbicides to place the trees into a free-to-grow condition.

Reason

As the majority of land within this management class occur on steep slopes with shallow rocky soils, artificial reforestation techniques are not considered feasible. Plantings of bare root and containerized seedlings on these type areas have been unsuccessful in the past. Seed produced by the residual stand is, genetically, the best suited for the site.

In summary, the trial management program on the low intensity management lands will generate an annual volume of approximately 12 MMBF for the initial decade.

c. Manage the 79,500 acres of commercial forest land having limited management potential with a mortality/salvage system; do not plan an annual unregulated harvest volume from these lands; harvest only dead, over-mature and dying, or road right-of-way timber when a road is constructed through these lands; in case of a catastrophe (bug epidemic, extreme blowdown, fire, etc.) follow the guidelines of a special silvicultural prescription including measures to protect fragile sites; conduct research to determine what type of management practices can be conducted on these lands.

Reason

These lands are characterized by shallow rocky soils, extremely droughty conditions resulting in severe regeneration problems, highly erosive soils, high water tables, and/or very steep slopes. The use of artificial reforestation techniques is not feasible under these conditions. Regeneration establishment would take a considerable number of years under any type of cutting system, according to the Operations Inventory. Programmed timber harvesting may result in possible site degradation.

Some harvesting may be possible on these areas. Research projects should be done to determine a possible management program for these lands.

# Part III

## Chronological History of the Allowable

## Harvest Planning Process

Refer to Figure 1 for an illustration of the relationship of allowable harvest planning to land use planning.

1. Forest Land Classification

The Timber Production Capability Classification system (TPCC) is an intensive classification process initiated in 1972 to partition all Bureau of Land Management administered lands in the Josephine Sustained Yield Unit into one of three major classes, based upon the land's biological capacity to produce timber. The purpose of this classification systems was to delineate all commercial forest lands which can be managed on a sustained yield basis using specific regeneration and site criteria. The three major classes are:

a. Non-Forest Land

These are lands which are not capable of being stocked with at least 10% forest trees, and lands which have been converted to non-timber uses (examples include rock outcrops, urban areas, and roads).

b. Non-Commercial Forest Land

These lands which are not biologically capable of producing at least 20 cubic feet of wood per acre per year of commercial species or land which can produce only non-commercial tree species.

c. Commercial Forest Land

These are forest lands which are biologically capable of producing at least 20 cubic feet of wood per acre per year of commercial coniferous tree species. This class contains two major subclasses: nonproblem sites and problem sites.

(1) Non-Problem Sites - These are commercial forest lands which can be managed by clear-cutting or partial cutting with expectations of adequate regeneration of the areas with a desired species within five years after clear-cutting, or within five years after the regeneration cut under shelterwood management using standard reforestation techniques.

(2) Problem Sites - These are commercial forest lands which have factors which limit or preclude management for timber production.

See Table 2 for a summary of the timber production capability of BLM-administered lands in the Josephine Sustained Yield Unit.

2. Prescribed Forest Management Practices by Management Classes

After the BLM-administered lands in the sustained yield unit were partitioned into individual units and classified as to their biological capabilities to produce commercial timber, each unit of commercial forest land was analyzed for the following management opportunities:

a. The most appropriate harvest system (clear-cutting, shelterwood cutting, or individual tree selection).

b. The most appropriate logging method (tractor log, cable log, skyline log, or helicopter log).

c. Treatments which will increase productivity such as planting following regeneration cuts, vegetative controls, stocking control (pre-commercial thinning and commercial thinning), fertilization, and/or stand conversion.

Management prescriptions were prepared for each unit of land suited for high intensity forest management. These prescriptions recommend appropriate management practices which increase productivity and protect the site. Table 3 contains a summary of past management on the high intensity forest management lands; Table 4 summarizes the prescribed management treatments on these acres for the next ten years.

Approximately 55,700 acres of commercial forest land have potential for low intensity forest management. Regeneration on these lands is expected to take longer than five years following a regeneration cut due to harsh site conditions. These lands could be harvested under a 2-stage shelterwood system, taking approximately 50% of the volume under the first cut; the residual trees should provide adequate shading and seed sources for natural regeneration. A programmed harvest is proposed on these lands.

Approximately 79,300 acres of commercial forest land have only limited forest management potential. These lands are characterized by shallow rocky soils, extremely droughty conditions resulting in severe regeneration problems, highly erosive soils, high water tables, and/or very steep slopes. Regeneration is expected to take a considerable number of years following regeneration cuts, and artificial reforestation techniques are not feasible. No programmed harvest is proposed on these lands because of probable site degradation; harvesting should be restricted to harvest of dead, overmature and dying, or road right-of-way timber when roads are constructed through these lands.

3. Field Reinventory

During 1976, a reinventory was conducted on the Josephine Sustained Yield Unit. The purpose of the reinventory was to obtain current data on growth, volume, etc.

Measurements taken included the physical dimensions of the trees, merchantable volume, etc. The accuracy of the measurement recorded were frequently checked by the District Inventory Specialist, Oregon State Office Inventory Specialist, and District Cruiser/Appraiser Specialists.

4. Young Growth Management Committee

A young growth management committee in the Medford District was appointed in September of 1976. The objectives of the committee were as follows:

a. Become familiar with technical young growth timber management data required for allowable harvest determination.

b. Make economic analyses of proposed intensive timber management investments.

c. Develop managed stand yield tables which represent timber yields anticipated from intensive management practices on lands administered by the District.

The committee first became familiar with available sources of information related to young growth management practices prescribed in the Operations Inventory. The prescribed practices were:

- plant genetically improved seedlings
- pre-commercial thinning
- commercial thinning
- mortality salvage
- scarification and interplant
- vegetative control, site preparation, and release
- fertilization
- irrigation
- insect control
- disease control
- animal control
- intensive planting (instead of depending on natural regeneration)

Members reviewed available literature on the prescribed practices. In addition to the literature reviews, District workshops were held and personnel from the Rogue National Forest, Siskiyou National Forest, Pacific Northwest Forest and Range Experimental Station, Pacific Southwest Forest and Range Experiment Station, and Oregon State

University were consulted. Based on the data thus obtained, the committee made the following recommendations:

a. No yield gain should be incorporated into allowable harvest calculations at this time for genetically improved seedlings because at the present rate of development, it would be Year 2007 before a significant number of genetically improved seedlings would be available for planting harvested lands. This is well outside a 20-year planning horizon.

b. Irrigation will not be practiced on an operation basis in the forseeable future, because it is only practical for aiding stand establishment and is only experimental at present.

c. All other prescribed practices are technically feasible.

After making the above recommendations, the committee made economic feasibility studies of the prescribed management practices; tables 5 and 6 show the results of the economic feasibility studies. All practices tested, as indicated in the tables, resulted in benefits exceeding a one to one ratio when assuming full benefit of allowable cut effect. The USFS Pacific Northwest Forest and Range Experiment Station D.E.F.I.T. Stand Simulator Computer Program was used to make yield projections for each practice.

The committee then developed managed stand yield tables. Management practices considered in preparing the yield tables were precommercial thinning, commercial thinning, and fertilization.

Specific assumptions made for each of these practices include:

a. Precommercial Thinning (PCT)

   18,700 acres would receive PCT during the first ten years, and 165,300 acres eventually; minimum PCT age would be 13 years.

b. Commercial Thinning (CT)

   3,600 acres would receive CT during the first ten years, and 165,300 acres eventually; minimum CT age would be 40 years; minimum size tree to be utilized is seven inch DBH to a five inch merchantable top; minimum of 5 MBF(1M cu. ft.) per acre is necessary to making CT operations economical.

c. Fertilization

   22,300 acres that receive PCT and CT during the first ten years would be fertilized, and 165,300 acres eventually; fertilizer would be reapplied at ten year intervals.

Table 7 summarizes the yields expected from precommercial thinning, commercial thinning, and fertilization; the table also summarizes yield reductions that are projected if site preparation, immediate planting, interplanting, and release are not carried out.

5. Computer Program Model Used to Compute the Annual Allowable Harvest

The SIMIX Computer Program was used to compute the annual allowable harvest. This program has three cutting method options:

- clear-cut only
- 3-stage partial cut only
- combination of clear-cut and 3-stage partial cut

Since the prescribed cutting methods for the lands in the Josephine Sustained Yield Unit are clear-cutting and 2-stage partial cutting, followed by intensive planting after the regeneration cut in both cases, the net effect on stand establishment, rotation age, yields, and volumes per acre are very similar. Therefore, the clear-cut option of the SIMIX program was utilized for all lands in the high intensity management class. The same regeneration period of four years, and the minimum harvest age of 60 years, was used to represent all lands.

The proposed allowable harvest was computed using cubic volume determination. The volumes are based on that portion of the entire tree that can be used to produce lumber or plywood as a primary product.

The cubic volumes are converted to scribner board feet for sale purposes. Conversion from cubic volume to scribner board feet is accomplished by applying tree measurements and cruise data to both volume tables separately.

The average conversion for the Josephine Sustained Yield Unit is 5.1 board feet per cubic foot.

Figure 1

Relationship of Allowable Harvest Planning to Land Use Planning

Land Use Planning

Allowable Harvest Planning

Inventory & Analysis Phase

Inventory of Forest Resources and Delineation of Forestry Land Base

← Summary Data

Timber Production Capability Classifications (Based on Biological Capabilities of all BLM-administered Lands to Produce Timber)

Identification of Management Opportunities, showing all of the various intensive management practices which are technically feasible

← Summary Data

Recommended Management Practices for Each Specific Tract

---

Decision Making Phase

Forestry Activity Recommendations (among other things, will recommend the maximum allowable harvest level possible using all intensive management practices available, without regard to impact on other resource values)

Reinventory (to obtain current data on growth, yield, site index, etc.

Calculation of Alternative Allowable Harvest Levels (using reinventory data, land base acreages, and management opportunities)

Multiple Use Recommendations and Tentative Decisions (will recommend an allowable harvest level which has been modified to resolve conflicts with other resource values)

---

Environmental Statement

Preparation of ES on the Proposed Forest Management Program

---

Implementation Phase

Declaration of New Allowable Harvest & Multiple Use Management Decisions Approved

Forestry Activity Plans (implementation of the land use decisions and new allowable harvest)

TABLE 2

Josephine Sustained Yield Unit
Timber Production Capability Summary

| | | |
|---|---|---|
| I. | Commercial Forest Lands | |
| | A. High Intensity Management Lands | 226,500 acres |
| | B. Low Intensity Management Lands | 55,700 acres |
| | C. Limited Management Lands | 79,300 acres |
| | Subtotal | 361,500 acres |
| II. | Non-Commercial Forest Land Classes | |
| | A. Non-Forest (NR) | 28,300 acres |
| | B. Non-Commercial Species (NT) | 9,600 acres |
| | C. Low Site (LS) | 25,600 acres |
| | Subtotal | 63,500 acres |
| | GRAND TOTAL | 425,000 acres |

TABLE 3

Past Management of High Intensity Forest Management Lands
in the
Josephine Sustained Yield Unit

| Management Treatment | Acres |
|---|---|
| No Past Treatment | 105,000 |
| Clear-Cut | 35,800 |
| Shelterwood Cut | 79,000 |
| Seed Tree Cut | 5,900 |
| Mortality Salvage | 200 |
| Precommercial Thinning | 300 |
| Commercial Thinning | 300 |
| TOTAL acreage | 226,500 |

TABLE 4

Prescribed Management Treatments for High Intensity Management Lands
for the Next Ten Years,
Josephine Sustained Yield Unit

| Prescribed Treatment | Approximate Acres |
|---|---|
| 1. Herbicide Site Preparation | 33,500 |
| 2. Mechanical Scarification | 160 |
| 3. Slash Disposal | 50,000 |
| 4. Replant existing non-stocked clear-cuts and Interplant existing understocked clear-cuts | 9,200 |
| 5. Plant Areas Receiving Regeneration Cut | 50,000 |
| 6. Herbicide Release | 13,200 |
| 7. Pre-commercial Thin | 18,700 |
| 8. Commercial Thin | 3,600 |
| 9. Regeneration Cut or Final Cut under a 2-stage shelterwood system | 45,000 |
| 10. Clear-cut | 5,000 |
| 11 Fertilize | 22,300 |

TABLE 5

Cost Estimates for Intensive Timber Management Practices,
Medford District, 1976

| Practice | Project Costs (per acre) Contract 1/ | Overhead 2/ | TOTAL |
|---|---|---|---|
| Planting 2-0 Stock | $100.00 | $25.00 | $125.00 |
| Chemical Site Preparation | 20.00 | 5.00 | 25.00 |
| Site Preparation 3/ | 125.00 | 25.00 | 150.00 |
| Chemical Release | 20.00 | 5.00 | 25.00 |
| Mechnical Release | 125.00 | 25.00 | 150.00 |
| Fertilization | 60.00 | 15.00 | 75.00 |
| Pre-commercial Thinning | 40.00 | 10.00 | 50.00 |
| Commercial Thinning | - | 5.50/MBF (1.07/M cu. ft.) | 5.50/MBF (1.07/M cu. ft.) |
| Final Harvest | - | 4.00/MBF (0.78/M cu. ft.) | 4.00/MBF (0.78/M cu. ft.) |

Annual Ave.
466,000
83,750
33,000
167,250

1/ Derived from bids accepted by BLM in 1976 for the type of work listed.

2/ Estimated from annual work plan relationships by averaging 25% of contracts costs per acre.

3/ Includes a variety of techniques such as mechanical scarification, herbicide application, auger planting with scalp, etc.

TABLE 6

Ranking of Intensive Practices by Benefit-Cost Ratio[1/]

| Description of Practice | Cost | Benefit/Cost Ratio |
|---|---|---|
| 1. Commercial Thinning, Starting at Age 70 | $ 5.50/MBF (1.07/M cu. ft.) | 128.2/1 |
| 2. Commercial Thinning, Starting at Age 60 | 5.50/MBF (1.07/M cu. ft.) | 90.2/1 |
| 3. Commercial Thinning with fertilization, starting at Age 70 | 225.00/acre | 25.9/1 |
| 4. Commercial Thinning with fertilization, starting at Age 60 | 300.00/acre | 25.3/1 |
| 5. Release of existing plantations | 25.00/acre | 12.0/1 |
| 6. Pre-commercial Thinning, followed by commercial thinning | 50.00/acre | 7.2/1 |
| 7. Conversion of Brushfields | 200.00/acre | 5.3/1 |
| 8. Site Preparation | 100.00/acre | 3.7/1 |
| 9. Plantation Establishment, followed by commercial thinning | 125.00/acre | 2.9/1 |
| 10. Thinning and Fertilizing from Year 10, repeated at 10-year intervals | 675.00/acre | 2.7/1 |
| 11. Planting versus a 20-Year wait for natural regeneration | 125.00/acre | 1.7/1 |
| 12. Combination of Site Preparation, plant, interplant, release, pre-commercial thin, commercial thin, and fertilization at 10-year intervals on an intensively managed acre | 1,050.00/acre | 2.2/1 |

[1/] Includes allowable cut effect.

TABLE 7

Yield Functions Generated by the Young Growth Management Committee for Use in Making Economic Analyses of Timber Investments

| Description of Practice | Total Yield per Acre at Age 100 (using Int. 1/8" log rule) | | | | | |
|---|---|---|---|---|---|---|
| | Without Practice | | With Practice | | Gain | |
| | MBF | M cu.ft. | MBF | M cu.ft. | MBF | M cu.ft. |
| Site Preparation 1/ | 39.7 | 7.78 | 61.2 | 12.00 | 21.5 | 4.21 |
| Plantation Establishment (vs. Natural) | 48.9 | 9.58 | 61.2 | 12.00 | 12.3 | 2.41 |
| Release 2/ | 45.2 | 8.86 | 61.2 | 12.00 | 17.0 | 3.33 |
| Pre-commercial Thinning, Followed By Commercial Thinning 3/ | 64.9 | 12.72 | 85.9 | 16.84 | 21.0 | 4.11 |
| Plantation Establishment, Followed By Pre-commercial and Commercial Thinning 4/ | 61.° | 12.0 | 89.1 | 17.47 | 27.9 | 5.47 |
| Fertilization 5/ | - | - | - | - | 22.0% | 22.0% |

1/ to overcome a 30-year regeneration lag
2/ increase yield by 2 site indices
3/ minimum pre-commercial thinning age of 13 years
4/ conducted at 10 year intervals
5/ 22% gain projected; applications at 10-year intervals beginning with first thinning.

IV

Recommended Allowable Harvest Volume

Consistent with current policy, the recommended annual allowable harvest includes both live and dead harvest volumes from only high intensity management lands. An additional unregulated annual harvest is recommended from low intensity management lands as part of a trial management program.

1. High Intensity Management Lands

The maximum potential annual allowable harvest from the commercial forest lands suited to high intensity forest management (226,500 acres) is 94.46 MMBF (18.52 MM cu. ft.). The recommended high intensity management acreage, however, is 222,900 acres and the recommended annual allowable harvest is 93.07 MMBF (18.25 MM cu. ft.). This is a reduction of 1.39 MMBF (.27 MM cu. ft.) due to the following considerations for other resources:

| Consideration | Acre Reduction | Volume Reduction (MBF) | (M cu.ft.) |
|---|---|---|---|
| Class I Stream Buffer Strips | 1,600 | 696 | 136 |
| Class II Stream Buffer Strips | 0 | 52 | 10 |
| Spotted Owl Nest Sites | 440 | 192 | 38 |
| Botanical Areas | 250 | 108 | 21 |
| Rogue River Foreground | 1,300 | 566 | 111 |
| VRM Class II Lands | 0 | 111 | 22 |
| TOTAL | 3,590 | 1,725[1/] | 338[1/] |

Table 8 shows a step-by-step volume reduction from the maximum potential annual allowable harvest volume because of other resource considerations.

2. Low Intensity Management Lands

The trial management program on the low intensity management lands, which will harvest about 600 acres per year for the next ten years, will generate an annual volume of approximately 12 MMBF.

No reductions are required in consideration of other resources, since there will be no cutting or treatments on areas of the 55,700 acres where there are potential conflicts with other resource activities.

1/ Small differences due to rounding.

3. Limited Management Lands

No programmed annual harvest is recommended from the commercial forest lands suited only to limited management (79,300 acres).

Some volume can be obtained from these lands by salvage harvest of dead, over-mature and dying, or road right-of-way timber when roads are constructed.

TABLE 8

Adjustments to Annual Harvest Volumes

| | Net Volume High Intensity Management Lands | |
|---|---|---|
| | (MMBF)[1/] | (MM cu. ft.)[1/] |
| A. Management Treatment | | |
| Harvesting and Planting only (no herbicides) | 64.15 | 12.96 |
| Herbicides for Site Preparation and Release (+11.59 MMBF) | 75.74 | 14.85 |
| Precommercial and Commercial Thinning (+12.79 MMBF) | 88.53 | 17.36 |
| Fertilization (+5.93 MMBF) | 94.46 | 18.52 |
| B. Multiple Use Considerations | | |
| Buffer Strips, Class I (-.70 MMBF) | 93.76 | 18.39 |
| Buffer Strips, Class II (-.05 MMBF) | 93.71 | 18.37 |
| Spotted Owls (-.19MMBF) | 93.52 | 18.34 |
| Botanical - Rare and Endangered Plants (-.11 MMBF) | 93.41 | 18.32 |
| Rogue River Foreground (-.57 MMBF) | 92,84 | 18.21 |
| VRM Class II (-.11 MMBF) | 92.73 | 18.19 |
| Recommended Volume | 93 | 18.25 |

1/ Small differences due to rounding

# V

# Comparison of Present Allowable Harvest

# and

# Recommended Allowable Harvest

The current allowable harvest volume for the Josephine SYU is 146 million board feet. The recommended allowable harvest volume is 93 million board feet. This constitutes a reduction of 53 million board feet, or 36%.

Most of the reduction is directly attributable to classifying 135,000 acres as either low intensity or limited management land. The current allowable harvest was computed using 334,500 acres, whereas the recommended allowable harvest utilizes 222,900 acres. The 33% reduction in acreage is mainly due to the results of a Timber Production Capability Classification survey (TPCC), which established a maximum acceptable regeneration time-frame and provides greater protection of fragile sites. Figures 3 and 4 show the acreage distribution used in the 1970 and 1977 recommended allowable harvest computations.

Approximately two million board feet of the reduction is due to excluding yield gains in the recommended allowable harvest for genetically improved stock. The reason for the exclusion is that a significant number of genetically improved seedlings would not be available for planting within a 20-year planning horizon.

A minor reduction is also attributed to differences in the regeneration lags which are programmed into the computer models as assumptions. A regeneration lag of zero years was used in 1970, whereas the new computation uses a lag of four years. On the average, a one year increase in regeneration lag lowers the allowable harvest level by 1.5 to 2%.

Offsetting the decreases caused by a reduced timber productivity base is a planned increase in intensive management practices. The application of management practices is expected to produce approximately 29 million board feet (11.6 MMBF from herbicide site preparation and release, 12.8 MMBF from thinning, and 5.9 MMBF from fertilization). A comparison of acreages programmed for intensive management practices for the current harvest and recommended harvest is shown in Table 9. The maximum potential increase in yield from application of these practices, however, cannot be obtained without an even distribution of age classes. With a disproportionate percentage of acres (79%) in the 80+ year age class, the Josephine SYU contains an insufficient amount of growing stock acreage available for treatment. Therefore, only about 50% of the maximum potential yield can be realized. Figure 2 shows a distribution of acres by age class for the 1977 inventory.

Table 9

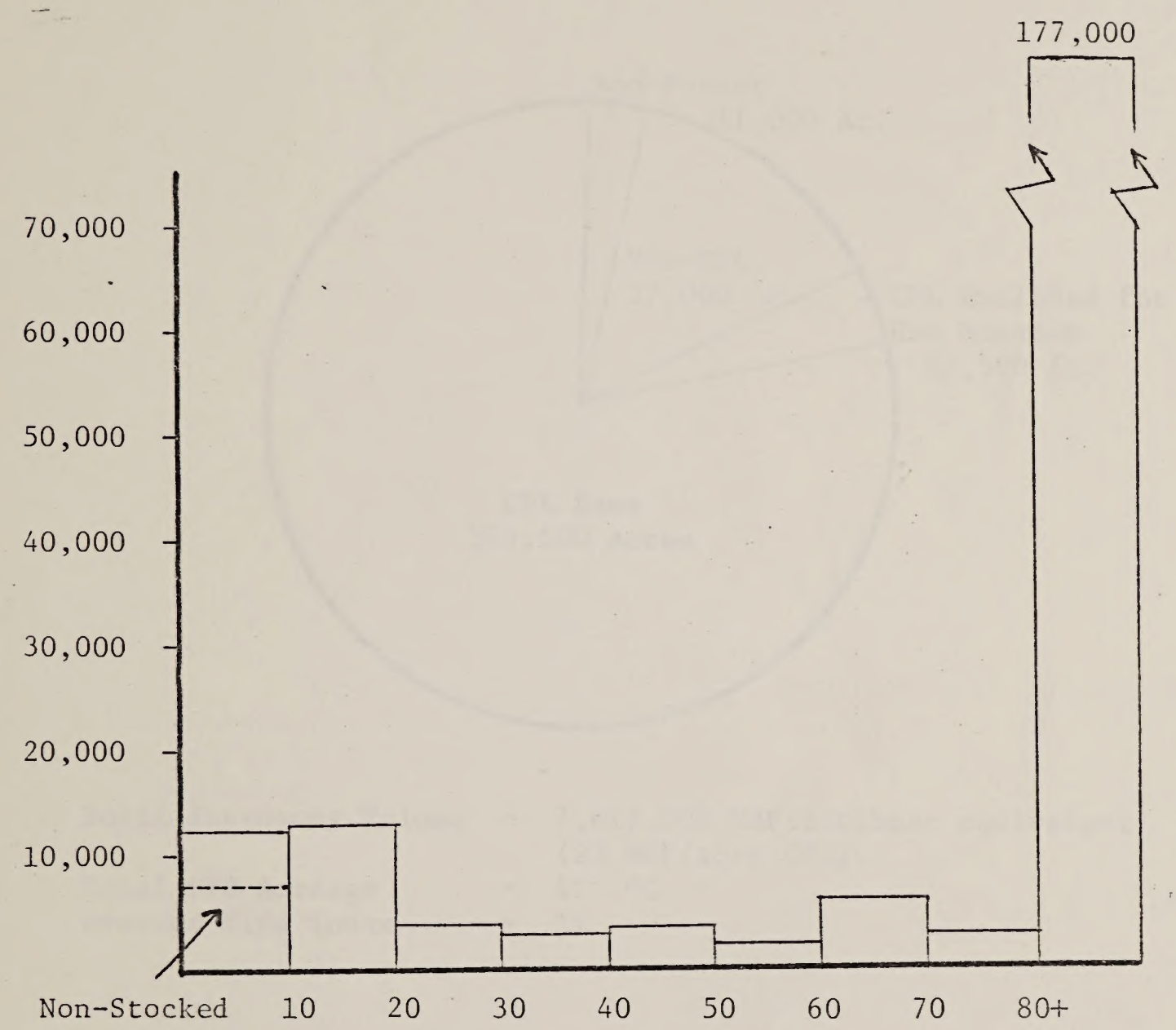
Comparison of Intensive Management Practices Used in Computation of the Current Harvest Plan and the Recommended Harvest Plan

| Management Practice | Acres to be Treated, Present Harvest (Acres) | Acres to be Treated, Recommended Harvest (Acres) |
|---|---|---|
| 1. Site Preparation | | |
| a. Herbicide | 0 | 147,300 |
| b. Mechanical Scarification | 0 | 12,500 |
| c. Controlled Burning | 0 | 39,000 |
| 2. Plant Genetically Improved Stock | 80,300[1)] | 0 |
| 3. Plantation Establishment (vs. Natural Regeneration) | 80,300[1)] | 222,900 |
| 4. Release by Herbicides | 0 | 187,000 |
| 5. Precommercial Thinning | 164,000[2)] | 165,300 |
| 6. Commercial Thinning | 164,000[2)] | 165,300 |
| 7. Fertilization | 0 | 165,300 |

1) Projects 24% of base would be planted with genetically improved stock.
2) Projects 49% of base would be commercial thinned.

Figure 2

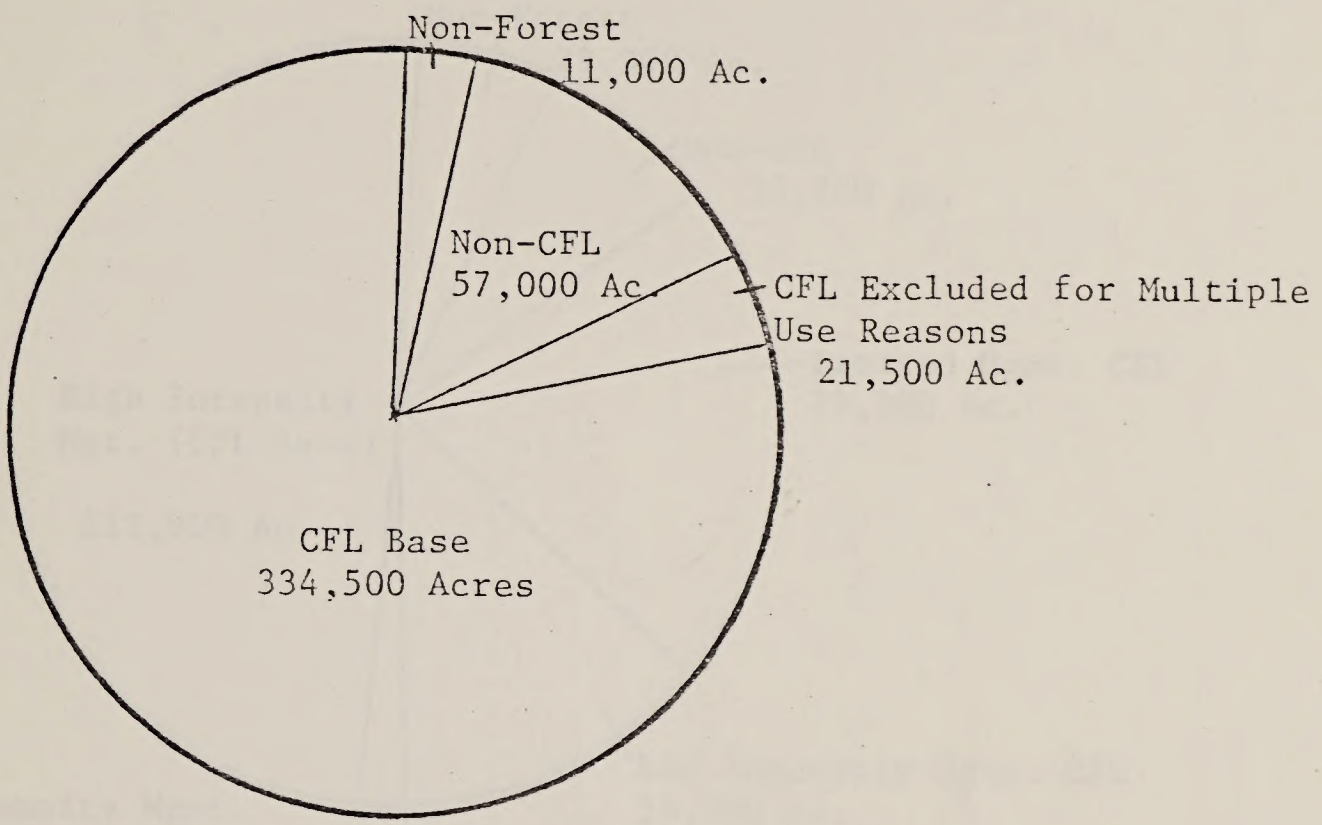
Distribution of Acres by Age Class, 1977 Inventory




AGE CLASSES

Figure 3

Acreage Distribution Used in 1970 Allowable Harvest Computation



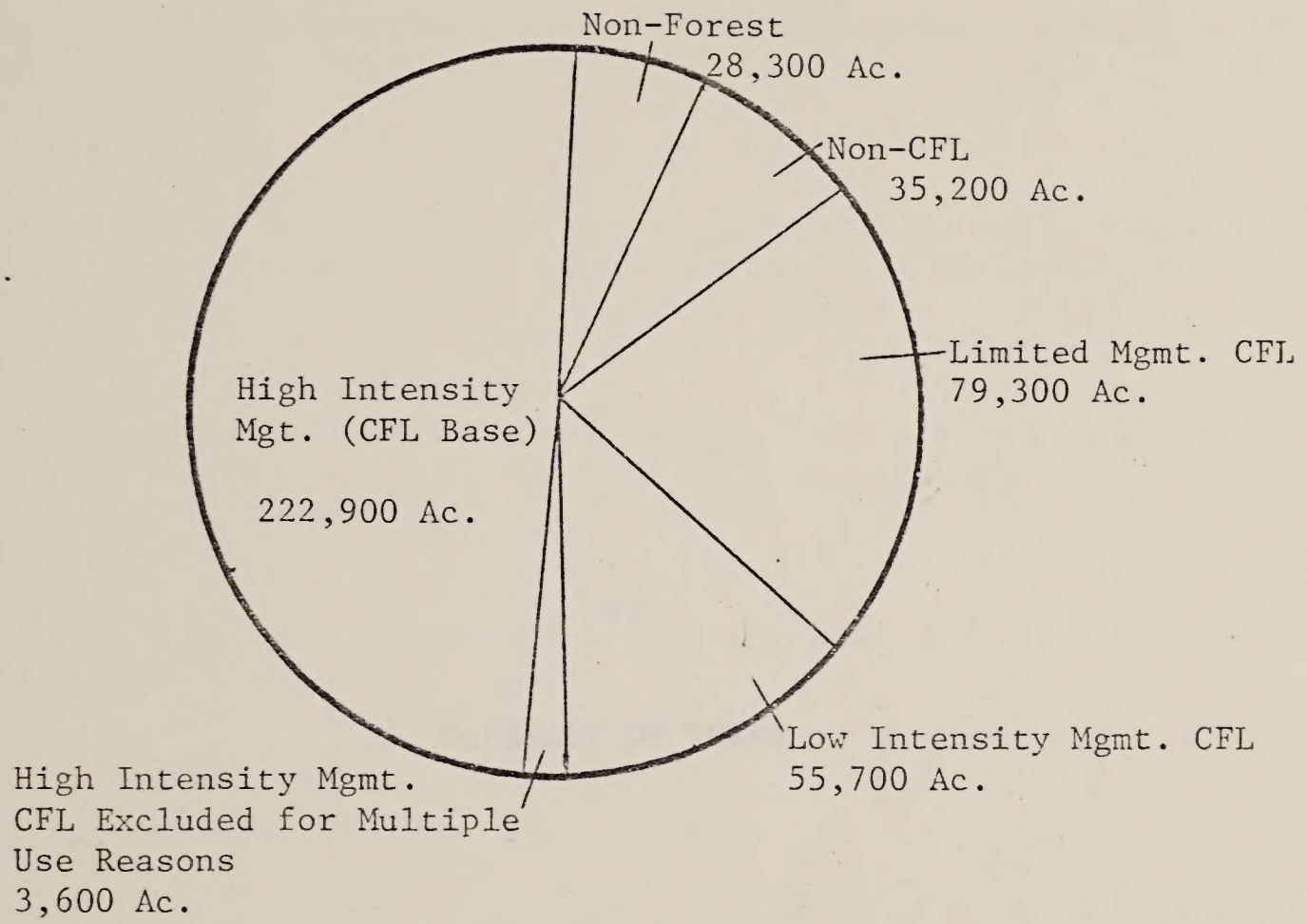

Total Inventory Volume = 7,612,000 MBF Scribner equivalent (23 MBF/acre CFL)
Total SYU Acreage = 424,00
Average Site Index = 11

Assumptions:

| | |
|---|---|
| Regeneration lag | - 0 years |
| 1st decade intensive management practices | - None |
| Ultimate percent of total acreage to undergo PCT-CT | - 49% |
| Ultimate percent of total acreate to be planted with genetically improved stock | - 24% |

Figure 4

Acreage Distribution Used in 1977 Proposed Allowable Harvest Computation




| | | |
|---|---|---|
| Total Inventory Volume | = | 5,202,000 MBF Scribner (23 MBF/acre CFL) |
| Total SYU Acreage | = | 425,000 |
| Average Site Index | = | 115 |

Assumptions:

| | |
|---|---|
| Regeneration lag | - +4 years |
| 1st decade intensive management practices | |
| Precommercial thinning | - 18,700 acres |
| Commercial thinning | - 3,600 acres |
| Fertilization | - 22,300 acres |
| Ultimate percent of total acreage to undergo PCT-CT | - 74% |
| Ultimate percent of total acreage to undergo fertilization | - 74% |

# GLOSSARY OF TERMS

This Glossary of Terms is not an official document nor is it complete. It is a simple and brief explanation of some words and terms which appear in the handout tonight or may be heard during future presentations.

Allowable Cut Effect

Recognition of future increased yields due to management practices applied now.

Allowable Harvest

Refers to the volume of timber that can be harvested annually from a unit of land on a permanent basis (sustained yield in perpetuity).

Class I Stream

Streams which support salmonid fish species. These streams also supply domestic water and are important for angling or recreation.

Class II Stream

Tributaries to Class I streams; major value is water quality and quantity supplied to Class I streams.

Clearcut

Removal of an entire stand in one cut.

Land Disposal

A transaction which leads to the transfer of public lands from public ownership.

Management Framework Plan

A planning decision document which establishes, for a given area of land, land use allocations, coordination guidelines for multiple use, and management goals to be achieved for each resource activity. It is the BLM's Land Use Plan, and is abbreviated MFP.

Mining Claim

Mineralized public lands held by an individual or corporation under the General Mining Laws of 1872, as amended, which provide that discovery of valuable minerals, other than leasable minerals, on public lands entitles the discoverer to a patent for such lands.

Multiple Use Management

The management of the various surface and subsurface resources so that they are utilized in the combination that will best meet the present and future needs of the American people.

O&C Lands

Original public domain lands which were revested in Federal ownership in 1916 due to violations of the terms of the land grant made in 1869 to the Oregon and California Railroad Company.

Planning Area Analysis

A planning document which analyzes the relationship of social and economic data to the physical and biological data presented in a Unit Resource Analysis (URA). This document is abbreviated PAA.

Right-of-Way

A permit or easement which authorizes the use of public lands for certain specified purposes, most commonly for pipe lines, roads, telephone lines, electric transmission lines, etc.

Shelterwood

Removal of mature timber in a series of cuttings.

Sustained Yield Unit

A grouping of lands which are related to each other by physical and economic factors, circumscribing a base marketing area for timber. A sustained yield unit is the basic land unit on which an allowable harvest is computed.

Trespass

Unauthorized use of Federal lands or resources.

Unit Resource Analysis

A BLM planning document which contains a comprehensive inventory and analysis of the physical resources, and an analysis of their potential for development, within a specified geographic area. It is abbreviated URA.

Visual Resource Management

Management of the visual landscape. This term is abbreviated VRM.